What is claimed is:

1. A recursive method for partitioning and assigning addresses based on geographic node locations in a network, comprising:

defining a smallest bounding outline that contains all nodes within the network;

partitioning said smallest bounding outline into two smaller bounding outlines divided according to an aspect ratio of said smallest bounding outline and assigning address bits to an address string of each of said two smaller bounding outlines; and

recursively dividing each of said resulting smaller bounding outlines from said partitioning step until all smaller bounding outlines contain one node each.

2. The method of claim 1, wherein said smallest bounding outline is a smallest bounding rectangle expressed as:

$$xL_0 = \text{min of } x(i) \text{ where } \{i \text{ in } N\}$$
$$yL_0 = \text{min of } y(i) \text{ where } \{i \text{ in } N\}$$
$$xH_0 = \text{max of } x(i) \text{ where } \{i \text{ in } N\}$$
$$yH_0 = \text{max of } y(i) \text{ where } \{i \text{ in } N\}$$

where N represents a set of nodes and x(i) and y(i) represent the x and y coordinates of the i-th node within the set N, where a rectangle $Z(N)$ whose lower left corner is (xL_0, yL_0) and whose upper right corner is (xH_0, yH_0) is the smallest bounding rectangle that contains N.

3. The method of claim 2, wherein said aspect ratio, t, is expressed as follows:

$$t(Z(N)) = (yH_0 - yL_0) / (xH_0 - xL_0)$$

4. The method of claim 1, wherein said partitioning step comprises:

partitioning said bounding outline parallel to the y-axis, if said aspect ratio is smaller than or equal to one; and

partitioning said bounding outline parallel to the y-axis, if said aspect ratio is greater than one.

5. The method of claim 4, wherein said partitioning step further comprising:

finding a value of x=x* such that the function

$$f1((Z(N), x)) = |c1(Z(N), x) - size(N)/2|$$

will be minimized, where c1(Z(N) , x), defined over $[xL_0 , xH_0]$, is the number of nodes in *N* that are contained in the outline whose lower left coordinate is (xL_0 , yL_0) and whose upper right coordinate is (x , yH_0).

6. The method of claim 4, wherein said partitioning step further comprising:

finding a value of y=y* such that the function

$$f2((Z(N), y)) = |c2(Z(N), y) - size(N)/2|$$

will be minimized, where c2(Z(N) , y), defined over $[yL_0 , yH_0]$, is the number of nodes in *N* that are contained in the outline whose lower left coordinate is (xL_0 , yL_0) and whose upper right coordinate is (xH_0, y).

7. The method of claim 4, wherein one of said partitioning steps produces 2 smaller divided outlines, R_0 and R_1, where R_0 contains all nodes N_0 within the outline with lower left coordinates of (xL_0, yL_0) and upper right coordinates of (x^*, yH_0) and R_1 contains all nodes N_1 within the outline with lower left coordinates of (x^*+1, yL_0) and upper right coordinates of (xH_0, yH_0).

8. The method of claim 4, wherein one of said partitioning steps produces 2 smaller divided outlines, R_0 and R_1, where R_0 contains all

nodes N_0 within the outline with lower left coordinates of (xL_0, yL_0) and upper right coordinates of (xH_0, y^*) and R_1 contains all nodes N_1 within the outline with lower left coordinates of (xL_0, y^*+1) and upper right coordinates of (xH_0, yH_0).

9. The method of claim 7, further comprising:

assigning a value of 0 to thé most significant unassigned bit of the address string for R_0 and a value of 1 to the most significant unassigned bit of the address string for R_1.

10. The method of claim 8, further comprising:

assigning a value of 0 to the most significantly unassigned bit of the address string for R_0 and a value of 1 to the most significantly unassigned bit of the address string for R_1.

11. The method of claim 1, wherein said recursive dividing step will terminate if each of the bounding outlines contains only one node and wherein said addresses are AESA addresses.

12. An apparatus for partitioning and assigning addresses based on geographic node locations in a network, comprising:

means for defining a smallest bounding outline that contains all nodes within the network;

means for partitioning said smallest bounding outline into two smaller bounding outlines divided according to an aspect ratio of said smallest bounding outline and assigning address bits to an address string of each of said two smaller bounding outlines; and

means for recursively dividing each of said resulting smaller bounding outlines from said partitioning step until all smaller bounding outlines contain one node each.

13. The apparatus of claim 12, wherein said smallest bounding outline is a smallest bounding rectangle expressed as:

xL_0 = min of x(i) where {i in *N*}

yL_0 = min of y(i) where {i in *N*}

xH_0 = max of x(i) where {i in *N*}

yH_0 = max of y(i) where {i in *N*}

where N represents a set of nodes and x(i) and y(i) represent the x and y coordinates of the i-th node within the set N, where a rectangle Z(*N*) whose lower left corner is (xL_0 ,yL_0) and whose upper right corner is (xH_0 , yH_0) is the smallest bounding rectangle that contains N.

14. The apparatus of claim 13, wherein said aspect ratio, t, is expressed as follows:

$$t(Z(N)) = (yH_0 - yL_0) / (xH_0 - xL_0)$$

15. The apparatus of claim 12, wherein said partitioning means partitions said bounding outline parallel to the y-axis, if said aspect ratio is smaller than or equal to one; and partitions said bounding outline parallel to the y-axis, if said aspect ratio is greater than one.

16. A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to perform the steps comprising of:

defining a smallest bounding outline that contains all nodes within the network;

partitioning said smallest bounding outline into two smaller bounding outlines divided according to an aspect ratio of said smallest bounding outline and assigning address bits to an address string of each of said two smaller bounding outlines; and

recursively dividing each of said resulting smaller bounding outlines from said partitioning step until all smaller bounding outlines contain one node each.

17. The computer-readable medium of claim 16, wherein said smallest bounding outline is a smallest bounding rectangle expressed as:

$$xL_0 = \text{min of } x(i) \text{ where } \{i \text{ in } N\}$$
$$yL_0 = \text{min of } y(i) \text{ where } \{i \text{ in } N\}$$
$$xH_0 = \text{max of } x(i) \text{ where } \{i \text{ in } N\}$$
$$yH_0 = \text{max of } y(i) \text{ where } \{i \text{ in } N\}$$

where N represents a set of nodes and x(i) and y(i) represent the x and y coordinates of the i-th node within the set N, where a rectangle $Z(N)$ whose lower left corner is (xL_0, yL_0) and whose upper right corner is (xH_0, yH_0) is the smallest bounding rectangle that contains N.

18. The computer-readable medium of claim 17, wherein said aspect ratio, t, is expressed as follows:

$$t(Z(N)) = (yH_0 - yL_0) / (xH_0 - xL_0)$$

19. The computer-readable medium of claim 16, wherein said partitioning step comprises:

partitioning said bounding outline parallel to the y-axis, if said aspect ratio is smaller than or equal to one; and

partitioning said bounding outline parallel to the y-axis, if said aspect ratio is greater than one.

20. The computer-readable medium of claim 16, wherein said recursive dividing step will terminate if each of the bounding outlines contains only one node.